AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1 (currently amended). A playback method for a recording medium to which data is recorded in block units containing multiple fixed-length frames, and block address information is pre-recorded, the playback method comprising:

acquiring the data from a first playback signal from the recording medium;

acquiring the block address information from a second playback signal based on pre-recorded block address information from the recording medium;

predicting the recording position of each frame in a block from the acquired block address information;

synchronizing to a frame level based on the acquired data;

determining [[the]] a memory address for storing the data acquired based on the predicted recording position; and

storing the acquired data at the determined memory address.

2 (currently amended). A playback method for a recording medium according to claim 1, further comprising:

determining whether synchronization at the data frame unit level has been established; and

detecting whether synchronization at the frame unit has been restored if frame synchronization goes out-of-step,

wherein when recovery of frame synchronization is detected, the memory address to which data is stored is determined based on the predicted frame recording position.

3 (currently amended). A playback method for a recording medium according to claim 1, wherein the [[data]] memory address in memory is determined with [[the]] a frame as [[the]] a smallest recordable unit.

4 (currently amended). A playback method for a recording medium according to claim 1, wherein block address information is recorded to the recording medium in a format different from [[the]] a data recording format.

5 (previously presented). A playback method for a recording medium according to claim 1, further comprising:

generating a result information for detection of synchronization code coded at the frame unit level according to specific rules;

demodulating the data in each frame to demodulated frame data; and

adding to each demodulated frame data block the result information for detection of synchronization code correlated to each frame.

6 (previously presented). A playback method for a recording medium according to claim 1, further comprising synchronizing at the frame unit level based on the acquired address information.

7 (previously presented). A playback control circuit for a recording medium to which data is recorded in block units containing multiple fixed-length frames, and block address information is pre-recorded, comprising:

a signal reader that acquires the data from a first playback signal from the recording medium, and acquires the block address information from a second playback signal based on pre-recorded block address information from the recording medium;

a recording address predictor that predicts the recording position of each frame in a block from the acquired block address information;

a synchronizer that synchronizes to the frame level based on the acquired data;

a memory that stores the data; and

a controller that determines the memory address for storing data based on the predicted recording position.

8 (previously presented). A playback control circuit according to claim 7, further comprising a synchronization detector that determines whether synchronization at the data frame unit level has been established, and detects whether synchronization at the frame unit has been restored if frame synchronization goes out-of-step,

wherein the controller determines the memory address to which data is stored based on the recording position predicted by the recording address predictor when the synchronization detector detects recovery of frame synchronization.

9 (previously presented). A playback control circuit according to claim 7, wherein a data memory address in memory is determined with the frame as the smallest recordable unit.

10 (original). A playback apparatus for a recording medium to which data is recorded in block units containing multiple fixed-length frames together with block address information, comprising the playback control circuit according to claim 7.

11 (currently amended). A playback method for reproducing data from a recording medium to which is recorded modulated frame data and a specific synchronization code prepended to the beginning of the modulated frame data,

the modulated frame data being error correction coded data segmented into multiple frame data blocks of a specific length and then modulated,

the playback method comprising:

acquiring signals from the recording medium;

acquiring a detection result of synchronization code by detecting frame synchronization codes from the acquired signals;

correcting frame synchronization based on the result for detection of acquired synchronization code;

generating a result information for detection of synchronization code coded according to specific rules from the detection result of synchronization code;

demodulating the modulated frame data for each frame and generating demodulated frame data;

adding the result information for detection of synchronization code for each frame to the corresponding demodulated frame data; and

correcting ~~rectifying~~ an error according to the detected synchronization code.

12 (currently amended). A playback method according to claim 11, wherein ~~rectifying~~ correcting an error comprises:

generating an erasure pointer for erasure-correction based on the demodulated frame data using the corresponding result information for detection of synchronization code; and

erasure-correction error correcting code from multiple demodulated frame data blocks using the erasure pointers for the demodulated frame data.

13 (previously presented). A playback method according to claim 11, further comprising:

a memory that stores the result information for detection of synchronization code and corresponding demodulated frame data in different memory areas with a known correlation therebetween.

14 (previously presented). A playback method according to claim 11, wherein the result information for detection of synchronization code is coded to differentiate between at least three detection results of "normal detection" when the synchronization code is detected normally, "undetected" when the synchronization code is not detected, and "out-of-step synchronization" when a next synchronization code is detected at a timing offset from a timing predicted from the timing of the detection result for the previously detected synchronization code.

15 (previously presented). A playback method according to claim 11, wherein when correcting frame synchronization corrects synchronization delay in which a new synchronization code is detected earlier than the timing predicted from the timing of the detection result of the previously detected synchronization code, and the synchronization delay is less than one frame,

the memory corrects the memory address of the frame data immediately after synchronization delay correction to an address derived by skipping an amount equivalent to the synchronization delay correction, and stores the frame data to the corrected address.

16 (previously presented). A playback method according to claim 15, wherein when correcting frame synchronization corrects synchronization delay in which a new synchronization code is detected earlier than the timing predicted from the timing of the previously detected synchronization code, and the synchronization delay is greater than or equal to one frame,

the memory corrects the memory address of the result information for detection of synchronization code and frame data immediately after synchronization delay correction to an address shifted equivalently to the correction for the synchronization delay, and then stores the data to the corrected address; and

an erasure pointer generator determines that result information for detection of synchronization code that is skipped and not stored to memory was undetected, and generates an erasure pointer thereto.

17 (currently amended). A playback control circuit for reproducing data from a recording medium to which is recorded modulated frame data and a specific synchronization code prepended to the beginning of the modulated frame data,

the modulated frame data being error correction coded data segmented into multiple frame data blocks of a specific length and then modulated,

the playback control circuit comprising:

a frame synchronizer that corrects frame synchronization based on a detection result of synchronization code acquired by detecting frame synchronization codes from playback signals acquired from the recording medium;

a generator that generates a result information for detection of synchronization code coded according to specific rules from the detection result of synchronization code;

a demodulator that demodulates the modulated frame data for each frame and generating demodulated frame data;

an adder that prepends the result information for detection of synchronization code for a frame to the beginning of the demodulated frame data;

a memory that stores the result information for detection of synchronization code and demodulated frame data;

a memory controller that stores the result information for detection of synchronization code and demodulated frame data to memory; and

a ~~rectifier~~ corrector that rectifies an error according to the detected synchronization code.

18 (previously presented).   A playback control circuit according to claim 17, further comprising:

an erasure pointer generator that generates an erasure pointer for erasure-correction using the result information for detection of synchronization code; and

an error corrector that erasure-corrects error correcting code composed from demodulated frame data using the erasure pointers.

19 (previously presented). A playback control circuit according to claim 17, wherein the memory controller stores the result information for detection of synchronization code and demodulated frame data to different memory areas.

20 (previously presented). A playback control circuit according to claim 17, wherein the result information for detection of synchronization code is coded to differentiate between at least three detection results of "normal detection" when the synchronization code is detected normally, "undetected" when the synchronization code is not detected, and "out-of-step synchronization" when a next synchronization code is detected at a timing offset from a timing predicted from the timing of the detection result for the previously detected synchronization code.

21 (previously presented). A playback control circuit according to claim 17, wherein when the frame synchronization means corrects synchronization delay in which a new synchronization code is detected earlier than the timing predicted from the timing of the previously detected synchronization code, and the synchronization delay is less than one frame,

the memory controller corrects the memory address of the frame data immediately after synchronization delay correction to an address derived by skipping an amount equivalent to the synchronization delay correction, and stores the frame data to the corrected address.

22 (previously presented). A playback control circuit according to claim 21, wherein when the frame synchronizer corrects synchronization delay in which a new synchronization code is detected earlier than the timing predicted from the timing of the previously detected synchronization code, and the synchronization delay is at least equal to one frame,

the memory controller corrects the memory address of the result information for detection of synchronization code and frame data immediately after synchronization delay correction to an address shifted equivalently to the correction for synchronization delay, and then stores the frame data to the corrected address; and

the erasure pointer generator determines that result information for detection of synchronization code correspond to a frame that is skipped and not stored to memory was undetected, and generates a erasure pointer thereto.

23 (original). A playback apparatus for reproducing data from a recording medium to which is recorded modulated frame data and a specific synchronization code prepended to the beginning of the modulated frame data,

the modulated frame data being error correction coded data segmented into multiple frame data blocks of a specific length and then modulated,

the playback apparatus comprising the playback control circuit according to claim 17.